

Application of: *Jae Sung Lim*
Appln. No. 10/822,325
Filed: 04/12/2004

IN THE CLAIMS:

Please amend claim 1, 6 and 17 as set forth in the complete claim listing below. This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method for communicating with seven or more terminals in a Bluetooth system having a master and a plurality of slaves, the method comprising the steps of:
checking that an active member address remains available to be allocated to a new slave such that the master establishes a communication connection with the slave;

in case an active member address remains available, allocating the remaining active member address to the slave, and in case no active member address remains available, calculating a service delay time and comparing the calculated delay time with a predetermined reference value;

in case the service delay time is larger than the predetermined reference value, refusing a call acceptance, and in case the service delay time is smaller than the predetermined reference value, converting a slave that has requested the call to sniff mode and determining a service sequence with respect to a predetermined reference according to the number of the slave calculated at a pre-scheduling duration;

allocating and ~~transmitting~~ giving a sniff interval time and an active member address to each of the slaves according to the service sequence, the sniff interval time being determined by an equation of $SIT = N * F + N_m$, (where "N" is the number of slaves intending to communicate with the master at present, "F" is a frame unit as a service sequence of a frame, and "N_m" is a slave position in one frame), and converting the slave allocated and given the sniff interval time and the active member address to be in a sniff mode; and

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[self] waking[-up] of a slave from sniff mode at the sniff interval time and using the active member address to complete the communication with the active master and to return a use right of the active member address.

2. (Original) The method of claim 1, wherein the service sequence is determined in a sequence of receiving an access request message.

3. (Original) The method of claim 1, wherein data transmission between the master and the slave is such that until the slave given the active member address completes the data transmission, it is activated after the sniff interval time so as to repetitively transmit data.

4. (Canceled)

5. (Original) The method of claim 1, wherein the slave having the service sequence determined is established in the frame unit for data transmission.

6. (Currently Amended) A method for communicating with seven or more terminals in a Bluetooth system having a master and a plurality of slaves, the method comprising the steps of:
transmitting an access request message from a parked slave to the master so as to establish a communication connection there between;
receiving the access request message so as to calculate the number of the parked slave and determine a service sequence with respect to a predetermined reference;
allocating and ~~[transmitting]~~ giving a sniff interval time and an active member address

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according to the service sequence so as to establish the communication connection, the sniff interval time being determined by an equation of $SIT = N * F + N_{th}$, (where "N" is the number of slaves intending to communicate with the master at present, "F" is a frame unit as a service sequence of a frame, and " N_{th} " is a slave position in one frame), and maintaining a sleep state, by a non-connected slave, while a sniff mode is maintained; and

[self] waking[-up] the slave of the sniff mode at the sniff interval time such that the active member address is used to complete data transmission with the master and return to the sniff mode.

7. (Original) The method of claim 6, wherein the step of transmitting the access request message from the parked slave is performed by a slotted collision sense multiple access (CSMA) way.

8. (Original) The method of claim 6, wherein the step of transmitting the access request message from the parked slave is performed by a time division multiple access (TDMA) way.

9. (Original) The method of claim 6, wherein data transmission between the master and the slave is such that un-parked slaves are all established in a frame and data is transmitted in a frame unit.

10. (Original) The method of claim 6, wherein the service sequence is determined prioritizing the slave not completing the communication for a beacon interval duration earlier.

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11. (Original) The method of claim 6, wherein the non-connection slave is given a sniff interval time and an active member address at a pre-scheduling duration.
12. (Original) The method of claim 6, wherein data transmission between the master and the slave is such that after all of the slaves transmitting the access request message are un-parked, the un-parked slaves are established in the frame and all of the slaves transmit data by one time.
13. (Original) The method of claim 6, wherein the service sequence is determined in a sequence of receiving the access request message.
14. (Original) The method of claim 6, wherein data transmission between the master and the slave is such that until the slave given the active member address completes the data transmission, it is activated after the sniff interval time so as to repetitively transmit data.
15. (Canceled)
16. (Original) The method of claim 6, wherein the slave having the service sequence determined is established in the frame unit for data transmission.
17. (Currently Amended) An apparatus for communicating with seven or more terminals in a Bluetooth system having a master and a plurality of slaves, the apparatus comprising:
a transceiver for transmitting and receiving a signal between the master and the slave;
a parking mode controller for analyzing the signal received from the transceiver so as to

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control a number of a parked slave, a data type and a number of packets to be transmitted by each slave, and a parameter necessary for a sniff mode;

a pre-scheduling unit for analyzing the signal received from the transceiver and determining a service sequence, a sniff interval time determined by an equation of $SIT = N * F + N_{th}$, (where "N" is the number of slaves intending to communicate with the master at present, "F" is a frame unit as a service sequence of a frame, and " N_{th} " is a slave position in one frame), and an active member address to be used by a slave for communication with the master after the wake-up during the sniff interval time; and

a controller for controlling the parking mode controller, the transceiver and the pre-scheduling unit to provide each slave with the sniff interval time and an active member address to be utilized by the slave that has woken up during the sniff interval time to perform the communication according to the service sequence.

18. (Original) The apparatus of claim 17, wherein the pre-scheduling unit automatically varies a packet depending on a data throughput communicating with the slave.

19. (Original) The apparatus of claim 17, wherein the parking mode controller controls parameters of the number of a beacon slot, the number of an access window, and the number of a slot per a window.